

as the blood presents a visible organization, the nutrient fluid of plants must also. And why? asks Prof. Mohl: there is no reason which should force such a conclusion on us; on the contrary, the presence of granules could scarcely have any relation to the nutrient power of the vegetable juice. The anatomical conditions of the plant would present every difficulty to their movement; and if, with M. Schultz, we perforate the walls of cells to give passage to vessels which no one has seen, we may establish whatever physiological laws we please, and any kind of deductions from them.

The *elatine* is not the true organic constituent of the latex which represents vegetable fibrine. This comparison has been shown above to be founded on errors of observation; but it will be seen to be still more contrary to nature, if we consider the chemical relations of fibrine and caoutchouc. While animal bodies are almost entirely composed of fibrine, or chemical combinations nearly identical with it, the great mass of the substance of vegetables is formed of matters which equally present the greatest chemical affinity to each other, which frequently pass from one into the other, and may be artificially transformed; and all these differ extremely from caoutchouc, since the latter contains no oxygen. How is it possible, asks the author, to consider the almost insoluble caoutchouc as the principal agent in the nutrition of plants? It is contrary to all the most recent observations in vegetable physiology. The latex is found in the smallest proportion in the youngest parts, where formation and nutrition are most active, and where it would be most necessary; while caoutchouc, from its chemical composition, cannot be included in the series of neutral combinations through which we have a right to admit a direct passage from sugar to ligneous fibre. M. Schultz is also unable satisfactorily to explain the fact that the milky juices are mostly poisonous.

Prof. Mohl concludes by stating that he is absolutely ignorant of the physiological value of the latex. We have no positive facts on which to base any certain theory; but one thing, he says, is settled, which is, that the theory of M. Schultz must be regarded as an entirely unsuccessful attempt to resolve the enigma, and that the term vital juice must be rejected.

L.—Notes on the Synonymy of the Genus *Apion*, with Descriptions of Five new Species, &c.. By JOHN WALTON, Esq.

SOME time back I made an attempt to correct the synonymy and to determine the species of the interesting little British *Curculionites* arranged under the generic title *Apion*\*. I have since

\* See Ent. Mag. vol. v. p. 8. and p. 254.

examined the whole group, and having additional materials for forming just conclusions on various points connected with them, I have thought a new list with such observations as have occurred might be acceptable to entomologists. In connexion with the synonyms it is necessary to observe, that the names of Marsham are quoted in the following pages on the authority of the Rev. Mr. Kirby, whilst those of the last-mentioned author are given from my own examination of the original specimens contained in the Kirbian collection. For the names and synonyms of M. Schönherr and Dr. Germar I have the authority of those two authors except where otherwise stated; an interchange of specimens has, however, in many cases enabled me to form an independent opinion.

Mr. Kirby and other subsequent writers state that the clava of the antenna of the insects of this genus has only three joints, when in fact it consists of four; when mounted in Canada balsam, covered with thin glass, and viewed as an opaque object, by means of a Lieberkuhn, with a power of 160 linear, the clava will be distinctly seen to be quadriarticulate, the apical joint being minute, so that the antenna is composed of twelve articulations. I have examined the rostrum of many species of this genus, and it appears that it has on the under side two deep antennal grooves, converging from the points of insertion of the antennæ, and uniting beneath the eyes; these grooves are divided towards the base by a narrow ridge, and their use is to receive and protect the basal joints of the antennæ. None of the British species described with the antennæ basal have the points of insertion strictly at the base, but all have them at a greater or less distance from it, and have the antennal grooves very deep and of the form of a V; in the first three species in which the rostrum is subulate, the antennal grooves are united beneath at the base, and form a broad, very deep, elongate furrow, which extends through the whole of the under side of the head.

Besides the works quoted in my first communication, I shall here have occasion to refer to the following:—

- Herbst.* Natursystem aller bekannten in- und ausländischen Insecten, &c., von C. G. Jablonsky, Berlin, vii. 1797. 8vo.
- Kirb.* Kirby on Herbst's genus *Apion* in the Transactions of the Linnæan Society, vol. ix. 1808; vol. x. 1811.
- Germ.* Magazin der Entomologie, von E. F. Germar, vol. ii. 1817; and (App.) vol. iii. 1818.
- Germ.* Germar in Entomologische Zeitung, Stettin, No. 1, Januar 1842, and No. 5, Mai 1842.
- Steph.* Systematic Catalogue of British Insects, by J. F. Stephens. 8vo. 1829.

1. *Apion Craccæ*, Linn., Herbst, Kirb., Gyll., Germ., Steph., Schönh.

*Curc. Craccæ*, Mus. Linn., Marsh.

*Ap.* (♂) *ruficorne*, Herbst, Kirb., Germ., Steph.

About the middle of October last I met with this species at Shirley Common near Croydon, in great abundance upon the oak and ash trees, but I have never found it upon the *Vicia Cracca*. Mr. Waterhouse however informs me that he has reared several specimens from the pods of that plant.

2. *A. Pomonæ*, Fab., Gyll., Germ., Steph., Schönh.

*Curc. cærulescens*, Marsh.

— (*β. var.*) *glaber*, Marsh.

*Ap. cærulescens*, Kirb.

In the first week of August last I collected a number of seed-pods of the *Vicia sepium* near Ryde in the Isle of Wight, and some time after, upon opening the paper in which they were inclosed, I found several specimens of *Apion Pomonæ* had made their escape from them; in other pods there were small perforations, as if made with a pin, and in these I found the living insect. Mr. Waterhouse and myself have beaten the present species out of the juniper bushes at Birch Wood in considerable abundance in the month of May.

3. *A. subulatum*, Kirb., Germ., Gyll., Steph., Schönh.

— (♂ var. *β.*), Kirb. MSS. et Mus.

— *Marshami* (♀), Steph. (♂), Schönh.

— (♂) *platalea*, Curt. not Germ.

I have again examined the two insects in the cabinet of Mr. Stephens under the name of *Apion Marshami*; they have the rostrum attenuated before the antennæ, neither *filiform*, nor *gibbous* beneath: they are certainly two female varieties of this species. The description of *Apion Marshami* by Schönherr was drawn from a specimen sent to that author by Mr. Waterhouse, which being now in the last-mentioned entomologist's possession, I have had an opportunity of examining and comparing it with others: it is undoubtedly the male of *Apion subulatum*. I may here mention that I have in my possession a species of *Apion* (the *Ap. opeticum* of Märkel) sent me by Dr. Germar, which he had supposed was the *Ap. Marshami* of Schönherr; it is certainly very nearly related to *Ap. subulatum*, but is however readily distinguished by the form of the rostrum, which is stouter at the base, distinctly gibbous beneath, and filiform in front of the antennæ. I possess specimens of *Apion platalea* sent me by Dr. Germar, which I find have no affinity to our *Ap. subulatum*, and are of a species not hitherto found in this country.

I have never met with *Ap. subulatum* in abundance, but have

occasionally found it in Yorkshire, the Isle of Wight, and other places, in the months of August and September, invariably on the *Lathyrus pratensis*: near Bletchingly, in September, both sexes were found rather plentifully by Mr. Wollaston.

4. *A. Limonii*, Kirb., Germ., Steph., Schönh.

The Rev. Mr. Kirby first met with this insect in the sea-marshes at Holme, next the sea, in Norfolk, in the months of July and August, upon the leaves of *Statice Limonium*. I obtained from this plant several hundreds of this splendid species on the 9th of August 1841 at the same locality; the oldest plants, with decaying leaves, produced by far the greater number of specimens.

5. *A. marchicum*, Herbst (1797), Germ., Gyll., Schönh.

— *Spartii*, Kirb. (1808), Germ., Steph., Schönh.

— (var.) *Rumicis*, Kirb., Germ., Steph.

— *violaceum*, Gyll. vol. iii.

*Curc.* (♀) *aterrimus*, Linn. (Mus. Linn.), Kirb. (Linn. Trans.).

I have frequently captured this species in considerable numbers, first in Yorkshire on the *Teucrium Scorodonia*, and afterwards on Hampstead Heath, in the month of August, from the *Rumex Acetosella*: having never found it in the south on the *Teucrium*, I was induced to examine my northern specimens with greater care, but cannot discover any specific difference. *Apion marchicum* takes a wide range of variation, both in form, size and colouring.

In a series in my possession of about 200 examples there are specimens less than a line in length, and others equal to a line and a half, with intermediate sizes; some have the elytra of a rich purplish copper colour, in others they are bright green, violet, dark blue, obscurely æneous, and black; the breadth of the head varies in both sexes, which is common to many other species of this genus; the thorax is generally subcylindrical, with the sides nearly straight, and having but little tendency to the globose form which usually characterizes the *Apion affine*; the upper surface is more or less convex, occasionally somewhat depressed, remotely punctured, with the impressed point before the scutellum sometimes obsolete; the elytra vary in form, being frequently short-obovate and sometimes long-obovate, and more or less convex: individuals may be selected from a long series where these modifications of form gradually merge into each other, and which, in my opinion, can only be regarded as varieties of a normal form. Germar, Gyllenhal and Schönherr have adopted the name *marchicum* for this species on the authority of M. Schüppel. The *Apion Spartii* and *Apion Rumicis* of Kirby, according to Germar and Schönherr (to whom I sent specimens),

are identical with *Apion marchicum* of Herbst. *Apion Rumicis* of Kirby's MS. and collection is decidedly a purplish-copper-coloured variety of his *Apion Spartii*. The authentic British specimens from which Schönherr described his *Apion Spartii* have been kindly lent me by Mr. Waterhouse for examination, and these I find also to be specifically identical with Kirby's *Apion Spartii*. In the Linnæan cabinet there is an insect with the name *Curc. aterrimus* attached to the pin; this insect I have repeatedly examined, and have always arrived at the same conclusion, that it is the *Apion marchicum* of Germ., Gyll., and Schönh. Mr. Kirby has little doubt that the specimen alluded to is the original *Curculio aterrimus* of Linnæus; but it is remarkable that the latter author should have always described the insect as "totus ater," for it has the elytra of a dark green colour: this circumstance has caused me to hesitate to adopt the old specific name *aterrimus*.

6. *A. affine*, Kirb., Germ., Steph., Schönh.

The affinity between this species and the foregoing (*Apion marchicum*) is extremely close; individuals are found of the same size, with the form and sculpture of the thorax so much resembling the preceding, as to induce Gyllenhal to consider the two species as scarcely distinct from each other. I cannot but regard *Apion affine* as a good species: it differs from *Apion marchicum* in being generally of a larger size, and varieties never occur so small as those of the latter species; the thorax inclines more to a globose form, with the punctures closer, larger and deeper; the elytra are proportionably wider and more convex, with less disposition to vary from the natural form than in *Apion marchicum*.

*Apion affine* appears to be a rare insect in the south of England, and was wanting in most of the London cabinets before I supplied them. I found this species in great abundance in only one locality—a hedge-bank in Yorkshire, at the latter end of June and the beginning of July, on various plants, but with none of *Apion marchicum* occurring; nor have I ever found any of *Apion affine* in company with *Apion marchicum*, in any of the different localities in the north and south of England.

7. *A. humile*, Germ. (1817), Gyll., Steph., Schönh.

— *brevirostre*, Kirb., Gyll. (vol. iii.) not Herbst.

— *curtirostre*, Germ., Steph.

— (var.) *sedi*, Gyll. (vol. iv.) not Germ.\*

— *plebeium*, Steph.

Mr. Kirby adopted the name *Apion brevirostre* of Herbst upon the authority of Major Gyllenhal, with the impression however that it was not the same, as it did not agree with Herbst's de-

\* Schönh. Syn. Ins. vol. v. p. 441.

scription. I possess foreign specimens of the true *Apion brevirostre* of Herbst sent me by Dr. Germar, and these are very distinct from the present species.

8. *A. minimum*, Herbst, Gyll., Germ., Schönh., Steph. Man.  
 — *velox*, Kirb., Germ., Steph. Ill.  
 — *foraminosum*, Schönh.

Dr. Germar has sent me German specimens under the last of the above names, with a remark that they do not differ from *Apion minimum*: in this opinion I perfectly agree.

Mr. Smith found this rare species in Turner's Wood, Hampstead, upon the *willows* in the month of May. Mr. S. Stevens and myself have also taken it somewhat plentifully in the same locality.

9. *A. simile*, Kirb., Germ., Steph., Schönh.  
 — *superciliosum*, Gyll. (vol. iv.), Schönh.

Specimens of both sexes of the *Apion simile* were sent by me to Schönherr, and returned by that author with the name *simile* but with a note of doubt. The insect from which Schönherr drew up his description of *Apion simile* was sent to him by Mr. Waterhouse, and was correctly referred to the *Ap. simile* of Kirby. An opportunity of examining the original typical specimens from which both Schönherr and Kirby made their descriptions has quite satisfied me on this point; according to Germar, *Ap. simile* of Kirby is identical with the *Ap. superciliosum* of Gyllenhal and the *Ap. triste* of Germar\*.

This species has been found at Birch and Coombe Woods, at Shirley Common near Croydon, Yorkshire, and in other places, the latter end of June and the beginning of July, always on the birch-tree (*Betula alba*).

10. *A. tenue*, Kirb., Germ., Steph., Schönh.

I found this insect plentifully in the Charlton sand-pits on the *Trifolium officinale* in the months of June and July; Mr. S. Stevens has taken it by sweeping, at Mickleham, Gravesend, Arundel, and other places, in the months of April, May, June, August and September.

11. *A. seniculus*, Kirb., Germ., Gyll., Steph., Schönh.  
 — *tenuis*, Gyll. (vol. iii.), Germ.  
 — (♀) *pusillum*, Mus. Steph. not Germ.  
 — (♂ ♀) *pubescens*, Schönh.

Not having had an opportunity of examining the Kirbian collection, Mr. Waterhouse formerly supposed the present species was the true *Apion pubescens* of Kirby, and in forwarding it un-

\* Ent. Zeit. Stettin 1842, p. 5.

der that name to M. Schönherr, has given rise to an error in the work of that author, M. Schönherr having in fact drawn up his description under the head "*Ap. pubescens*, Kirby\*," from Mr. Waterhouse's specimens; and these I find upon examination were the *Apion seniculus* of Kirby, a nearly allied but certainly distinct species. The *Apion elongatum* of Germar is quoted by Schönherr as synonymous with the *Ap. seniculus* of Kirby. I have now in my possession a specimen of the *Ap. elongatum* from Germar, and am quite satisfied that it is a distinct species. I have found *Apion seniculus* very plentifully near Knaresborough, in Yorkshire, by sweeping in fields of grass during the months of May and June; it is less common near London.

12. *A. pubescens*, Kirb., Steph.

— *civicum*, Germ.

— *Salicis* (Chevr. in Litt.), Schönh.

The description given under the name of *Ap. pubescens* by Schönherr† was taken from specimens forwarded to that author by Mr. Waterhouse, which, unfortunately, were not the *pubescens* of the original describer of the species; they were undoubtedly the *Apion seniculus* of Kirby: of the true *Apion pubescens* I sent six examples, including the sexes, to Schönherr, who observed that they were new to his collection, but were the species he had described as *Ap. pubescens* of Kirby!

I likewise forwarded several examples of *Ap. pubescens* to Dr. Germar, who stated that they are without doubt specifically identical with his *Ap. civicum*. I possess an insect sent me by Chevrolat of Paris, under the name of *Apion Salicis* of Chevrolat and Schönherr, which is, very distinctly, a true *Ap. pubescens* of Kirby.

I captured *Ap. pubescens* in great numbers on the east side of Hastings on the 4th of August, upon willows growing in hedges, and also in Yorkshire amongst grass. Mr. S. Stevens has taken it at Birch Wood, Arundel, and Hammersmith, in the months of August and September.

13. *A. Curtisii* (Kirb. MSS.), Curtis‡.

Specimens of the true *Ap. Curtisii* which I sent to Schönherr were regarded by that author as the *Ap. civicum* of his work and of Gyllenhal. The insect described under the last-mentioned name by Gyllenhal had been received from Schüppel as the *Ap. civicum* of Germar, and judging from the description in the 'Insecta Suecica' (vol. iv. p. 544), I am inclined to believe that *Ap. civicum* of Gyllenhal is synonymous with the *Ap. pu-*

\* Schönh. Syn. Ins. vol. v. p. 383.

† *Ibid.*

‡ Ann. Nat. Hist. vol. v. p. 281.

*bescens* of Kirby, and therefore distinct from the present species. That the two are distinct I have further evidence, for Dr. Germar, to whom I sent specimens of *Ap. Curtisii*, and whose attention I particularly directed to the points of difficulty, informed me that it was a new species and not in his collection. The *Apion seniculus*, *Curtisii* and *pubescens* are nearly allied. *Ap. pubescens* is distinguished from *Ap. Curtisii* by its *broad convex* form, its *more* pubescent body, and in being *less* glossy; the head is *broader*, and has a *concavity* between the eyes; the rostrum is less glossy, and is slightly pubescent; the antenna has the third and fourth joints longer.

*Ap. seniculus* differs from *Ap. Curtisii* in being larger and proportionably longer, in having the body distinctly clothed with whitish hairs, the head narrower in proportion, and the rostrum, in both sexes, much longer, but more strikingly so in the female: the elytra are oblong-ovate.

*Ap. Curtisii* has been taken on the sea-coast near Little Hampton amongst grass, in the month of August, by Mr. S. Stevens; and also by myself, in profusion, near Arundel, in the same month. Deal

14. *A. violaceum*, Kirb., Gyll., Steph., Schönh.

This species, which is widely distributed, is found upon the common dock (*Rumex obtusifolius*) in many parts of England during the spring and autumnal months.

15. *A. Hydrolapathi*, Marsh., Kirb., Gyll., Germ., Steph., Schönh.

This species is closely allied to the preceding, and is rather difficult to distinguish; but the head is evidently *broader*; the rostrum shorter, and *thicker* at the base; the thorax instead of an impressed point has a *longitudinal* furrow.

This, like the last species, is found in various parts of England. I have taken it both on the common dock and the great water-dock (*Rumex Hydrolapathum*) in the months of June and September.

16. *A. frumentarium*, Linn., Payk. (1792), Gyll., Schönh.

— *hamatodes*, Kirb., Germ., Steph.

In the nomenclature of this species I have followed the Swedish entomologists, because that species which we call the *Ap. frumentarium* of Linnæus is not a native of Sweden; there is no specimen in the Linnæan cabinet, and the description is too short in the 'Fauna Suecica' to decide the question; the term "longirostris" is also used by Linnæus to define *Curc. Pruni*, placed by him in the same section; the *Curc. frumentarium* of Fabricius, the next oldest writer, is equally if not more difficult to determine; according to Gyllenhal (who had better opportunities of judging



than Kirby), the present insect is the *Curc. frumentarius* of Paykull; for these reasons I have ventured to change the name.

I obtained many specimens of this species near High Harrogate and at Scarborough in Yorkshire, in the months of July and August, from the *Teucrium Scorodonia*, in company with *Ap. marchicum* and *Ap. rubens*. On Hampstead Heath abundantly upon the *Rumex Acetosella*, also in company with *Ap. marchicum*, but I never observed it in the south upon the first plant.

17. *A. rubens* (Ingall MSS.), Steph. Man.

This species is immediately distinguished from all its congeners by its *narrow* form, more *pubescent* body, and by the head being comparatively *very short*.

Found very sparingly in Yorkshire on the *Teucrium Scorodonia*, but somewhat plentifully at Shirley Common near Croydon on the *Rumex Acetosella* in October; and in sand-pits at Hampstead Heath, Weybridge, and Wimbledon Common, by S. Stevens.

18. *A. sanguineum*, DeGeer, Gyll., Schönh.

Oblong-obovate, dull rufo-testaceous; pubescent: head *rather short*, coarsely punctured, somewhat rugose between the eyes, the punctures larger and deeper than on the thorax; eyes black, rather prominent: rostrum in the male shorter and thicker than in the female, rather opaque, distinctly punctulated to the apex, nearly *straight*; in the female long, cylindrical, glabrous and shining, with scattered minute punctures, the tip piceous; *subporrect*: antennæ inserted a little behind the middle: thorax oblong; anteriorly slightly constricted and margined, more narrowed in front than behind, dilated in the middle, thickly and very minutely punctured, with a short impressed line at the base before the scutellum: elytra long-oval, moderately convex, crenate-striate, the interstices narrow, elevated, finely strigose: legs obscure rufo-testaceous, with the apex of the claws black. (Length  $1\frac{1}{2}$ — $1\frac{3}{4}$  line.)

This insect may be known from all the red species principally by having the rostrum nearly *straight*, and much *longer* in the female than in the male; a specimen was sent to Schönherr of the present species by Mr. Waterhouse, and returned with the name of *Ap. sanguineum*.

It is apparently a very rare or a very local species; I never met with it, but am indebted to Mr. Waterhouse for my specimens. Mr. S. Stevens has examples from the collection of Mr. Griesbach, which were taken, he believes, at Coombe Wood.

19. *A. cruentatum*, Walton.

— *sanguineum*, Mus. Steph.

Long-obovate, testaceous, slightly pubescent: head rather long,

*coarsely rugose-punctate*; eyes very prominent, black: rostrum short, curved, *very stout*, punctulated and shining, the apex black: thorax subcylindrical, dilated at the middle, rather deeply constricted and margined anteriorly, narrowed posteriorly, convex above, *thickly* and *coarsely* punctured: elytra obovate, *very convex*, deeply punctate-sulcate, the interstices narrow and elevated, scarcely as broad as the sulci: legs rather stout; the tibiæ and claws at their apices piceous. (Length  $1\frac{1}{2}$ — $1\frac{3}{4}$  line.)

There is a great resemblance between the present species and *Ap. frumentarium*, but this is a larger and more robust insect, with the rostrum distinctly thicker; the punctures on the head and thorax are larger and deeper, and the legs stouter.

This species is unknown to Germar and Schönherr; it is apparently rather rare; I possess specimens taken in Yorkshire, and others from a grass field in September on the west side of Turner's Wood, Hampstead: I never found it in company with *Ap. frumentarium*.

20. *A. miniatum*, Schönh.

— *frumentarium*, Herbst, Marsh., Kirb., Germ., Steph.

Found in many places throughout England on the common dock (*Rumex obtusifolius*) in July.

21. *A. Onopordi*, Kirb., Germ., Gyll., Steph., Schönh.

— (var.) *rugicolle*, Steph.

— *penetrans*, Steph. non Germ.

I have never seen an indigenous specimen of *Ap. penetrans* of Germar (recorded as British); my foreign examples from Germar have the habit of *Ap. Onopordi*, but they are nevertheless very distinct from it: the thorax is *less convex*, and the punctures much *smaller*; the elytra are *elongate*, very *obscure* blue-black, and *pubescent*.

Common in Yorkshire and in many other places on thistles (*Onopordum Acanthium*).

22. *A. radiolus*, Marsh., Kirb., Gyll., Steph., Schönh.

*Curc. aterrimus*, Marsh., Gyll. vol. iii.

*A.* (var.) *oxurum*, Kirb., Germ.

— (♀) *nigrescens*, Steph.

— *validum*, Germ., Schönh.

The foreign specimens of *Ap. validum* sent me by Schönherr and Germar are clearly identical with *Ap. radiolus* of Marsham.

Very abundant in Yorkshire and the south of England on mallows (*Malva sylvestris*) in June.

23. *A. confluens*, Kirby, Steph.

— *stolidum*, Gyll., Schönh.

For remarks on this species I must refer to the following (*Apion stolidum* of Germ.).

Mr. S. Stevens has found this species on very dry banks, but rarely; Brighton and Arundel in August, Birch Wood in July.

24. *A. stolidum*, Germ., Steph. Man.

— *confluens*, Gyll., Schönh.

*Apion stolidum* of Germar and *Apion confluens* of Kirby (but not of Gyllenhal and Schönherr) are in fact extremely alike; varieties occur, which in the form of the elytra are difficult to distinguish; nevertheless I think they ought to be given as distinct species; the former may be distinguished from the latter by its shorter elytra and thorax. I sent several specimens with short elytra to Germar, under the name of *Apion confluens* of Kirby, and also two larger insects with the elytra elongate, named in doubt *Ap. stolidum*? of Germar: the former with short elytra he informed me were the true *Ap. stolidum* of Germar, and the latter the *Ap. stolidum* of Schönherr, but previously unknown to him. The two large insects with elongate elytra I have since ascertained, by an examination of the typical specimen, belong to the *Ap. confluens* of Kirby: beyond this it will be clearly seen that Germar's description and figure of *Ap. stolidum* must refer to the species having short elytra. Gyllenhal and Schönherr have reversed the names of the two species, and it is rather remarkable that these authors should have overlooked the important words "coleoptris oblongo-ovatis" in Kirby's description, using the terms "elytris ovatis" as characteristic of *Ap. confluens*, whilst "elytris oblongo-ovatis" forms part of their description of *Ap. stolidum*. I may add, that Mr. Waterhouse sent to M. Schönherr two large specimens with the elytra oblong-ovate, and two smaller insects with the elytra short-ovate; the former were returned as *Ap. stolidum*, and the latter as *Ap. confluens*.

Mr. Samuel Stevens has found this species rather plentifully in July and August near Hammersmith Bridge, but, as he informs me, not in company with *Ap. confluens*. I met with a great number of this species by sweeping in a pasture opposite Juniper Hall, near Mickleham, on the 11th of June.

25. *A. laevigatum*, Kirb., Germ., Steph.

— *brunnipes*, Schönh.

The male of this species is entirely black: the female has the elytra of a rich violet-colour.

Mr. S. Stevens found a male of this very rare and beautiful species at Birch Wood; I afterwards fortunately obtained from the same locality several specimens of both sexes, the latter end of August and the beginning of September.

26. *A. aneum*, Fab., Herbst, Marsh., Kirb., Gyll., Germ., Steph., Schönh.

*Curc.* (var.  $\beta$ .) *chalceus*, Marsh.

Common on mallows (*Malva sylvestris*) in June.

27. *A. Carduorum*, Kirb. (1808), Germ., Steph.

*Curc. Sorbi*, Marsh.

*A. gibbirostre*, Gyll. (1813), Schönh.

— (var.) *tumidum*, Steph.

This insect has, near the base of the rostrum, two concavo-convex plates or cups (one on each side), surrounding the outer edges of two deep foveæ, and the antennæ are inserted in the concavities beneath; the edges of the plates in front have a deep excision to receive the antennæ when extended forward; the foveæ and the antennal grooves behind are separated by a prominent narrow ridge or carina which terminates beneath between the eyes: I have observed under the rostrum of *Apion æneum*, and in other species also, two deep foveæ which are externally dilated, and have the usual deep antennal grooves behind.

Frequently found upon thistles (*Carduus*) the latter end of July and the beginning of August.

28. *A. rufirostre*, Fab., Herbst, Marsh., Kirb., Germ., Gyll., Steph., Schönh.

— (♀) *malvarum*, Kirb., Germ.

*Curc. Trifolii*, Marsh. not Linn.

Found abundantly on the mallow (*Malva sylvestris*) in Yorkshire and within the metropolitan district, the latter end of June and the beginning of July.

29. *A. Malvæ*, Fab., Marsh., Kirb., Germ., Steph., Schönh.

Very plentiful on mallows (*Malva sylvestris*) at Birch and Coombe Woods, Comhurst near Croydon, and at Gravesend, in June and July.

30. *A. vernale*, Fab., Herbst, Kirb., Gyll., Germ., Steph., Schönh.

*Curc. concinnus*, Marsh.

I found this insect on the south side of Windmill Hill, Gravesend, on the common stinging-nettle (*Urtica dioica*) in May, and Mr. S. Stevens met with it in the same locality in October, and also at Southend in June; it appears to be very local and uncommon. Deal—July

31. *A. pallipes*, Kirb., Gyll., Germ., Steph., Schönh.

— *geniculatum*, Germ.

This species is very sparingly clothed with scattered whitish hairs, and all the *coxæ* are black; the trochanters and *tarsi* piceous or pitchy black; the antennæ with the basal joints generally piceous, and the club always dusky black. Germar has sent me a foreign specimen of his *Ap. geniculatum*, which he says is the *pallipes* of Kirby: no doubt can exist as to the correctness of this opinion.

This insect is apparently rare in the south of England: it was taken at Arundel in August, and at Dorking in June, by Mr. S. Stevens; and by myself at Knaresborough, in Yorkshire, plentifully in June and September, amongst grass and on banks under hedges.

32. *A. Germari*, Walton.

Ovate or long-ovate; *aneous* black; *thickly* clothed with a fine cinereous pubescence: head very short, subquadrate, punctulated, with an obsolete channel between the eyes; eyes moderately prominent, *ciliated*: rostrum in the male short, stout, and *thickly* covered with whitish hairs; longer in the female, rather slender, attenuated before the antennæ, smooth, glabrous, and shining: the antennæ inserted near the base beneath, entirely dull testaceous: thorax subcylindrical, thickly and finely punctured, the punctures confluent, with a dorsal line before the base more or less distinct: elytra *ovate, very convex*, punctate-striate, the interstices slightly elevated, evidently *punctured, very pubescent*, with a whitish *spot* on each side of the scutellum, and a broad denuded transverse *fascia* on the middle of the back: legs slender, *yellow*; the coxæ black; all the *trochanters*, with the joints of the legs, the *tarsi* and claws, at their apices, *rufo-testaceous*. Length 1—1 $\frac{1}{4}$  line.

The affinity between this and the preceding species is certainly very close, but I am convinced it is sufficiently distinct; it is a smaller insect, and differs in having a shorter form, a more convex body, the legs more slender, and in being considerably more pubescent, especially in recent specimens: the elytra having the white spots at the base, the denuded fascia on the back, the punctured interstices, yellow legs, the pale trochanters and tarsi, are all good distinctive characters.

I have the pleasure of naming this new species as a testimony of respect to one of the most learned and distinguished entomologists in Europe.

It is unknown to Schönherr and to Germar, to each of whom I sent specimens under the above name.

I found this species very abundant on *Mercurialis annua* in the middle of September and October near the Tivoli Gardens, Margate.

33. *A. flavimanum*, Schönh. 1833.

— *picicorne* (Waterh. MSS.), Steph. Man. 1839.

The anterior tibiæ of this species are generally more or less dusky testaceous or piceous, sometimes *entirely black*; the antennæ have the joints rufo-testaceous, piceous or black, the club always dull *black*.

